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ABSTRACT

Perceived locus of causality is an important factor in assessing the impact of prior success or failure on later performance. In order to examine the effects of internal (self) versus external (partner) attributions on subsequent performance, two studies were conducted. In the first study 80 female undergradutes worked on a series of mazes with an ostensible co-subject who was actually a confederate. All subjects received success feedback and were led to attribute their success either to their own actions or to the actions of their partners. Half of the subjects were then tested on an additional maze, and the rest were tested on a different task. In the second study 92 female undergraduates followed the same procedures as those in the first study with minor variations. The results showed that subjects in the internal attribution condition performed better when tested on the same (maze) task than on a different task; the reverse was true for those in the external attribution condition. The findings indicate that attributions are important determinants of subsequent performance. (Author/BH)

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Internal Versus External Attributions are Important Determinants of Subsequent Performance

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Abstract

Are internal versus external attributions important determinants of subsequent performance? Recent theoretical statements have taken both sides of this issue. Empirical evidence is also mixed. In this paper, research which examined the impact of self (internal) versus partner (external) attributions regarding a two-person successful outcome on subsequent individual performance is presented. Subjects worked on a series of mazes in collaboration with an ostensible co-subject who was actually a confederate. All subjects received success feedback following each attempt and were led to attribute their success either to their own actions or to the actions of their partners. Half were then tested on an additional maze; the rest were tested on a different task. The results revealed, in contast to the results recently reported by Carver and Scheier (1982), that attributions were important determinants of subsequent performance. Subjects in the internal attribution condition performed better when tested on the same (maze) task than on a different task; the reverse was true for those in the external attribution condition. Discussion centered on the interaction between locus of causality and the nature of the subsequent task, motivational factors underlying the relationship, and Carver and Scheier's null findings.

When assessing the impact of prior success or failure on later performance, is it important to consider the role of the perceived locus of causality for those prior outcomes? According to several theorists (e.g., Abramson, Seligman, & Teasdale, 1978; Carver & Scheier, 1982), the perceived locus of causality (i.e., internal versus external) for one's achievements is not an important factor affecting future performance. Instead, performance is thought to be directly affected by one's expectations, and attributions are viewed as important only insofar as they affect the expectations in question. According to this rationale, different attributions (e.g., high ability vs. ease of the task) may lead to the same level of expectations, which in turn should result in the same level of performance. For example, Carver and Scheier (1982) stated that "...the internality of the attributional basis for the expectancy does not directly influence behavior. Only the expectancy itself influences behavior" (1982, p. 186).

A different approach to the effects of attribution on performance suggests that attributions for prior outcomes influence not only expectancy but also affect, and that both expectancy and affect determine subsequent behavior (Weiner, Heckhauser, Meyer, & Cook, 1972; see also Weiner, 1972, 1974). Specifically, Weiner et al. suggested that expectancies are influenced primarily by the perceived stability of the outcome's perceived cause (i.e., stable/unstable), whereas affect is influenced primarily by its perceived locus of causality (i.e., internal/external). Thus, Weiner appears to have given both attributions and affect a more central role in predicting performance than did Abramson et al., (1978) or Carver and Scheier (1982).

Also, the internal/external dimension for performance attributions is directly relevant to self-esteem considerations (e.g., Zuckerman, 1979). Further, these considerations (along with their attributional correlates) can

affect performance, as was shown by Frankel and Snyder (1978). They reported that, following failure, subjects performed better on an second task if that task was described as extremely difficult rather than moderately difficult, in spite of the fact that their expectations were probably more negative. Since failure on an extremely difficult task is less likely to be attributed to a lack of ability (which poses a threat to self-esteem), subjects' differential performances were seen as indicating their responsiveness to the degree to which possible failure would be threatening to their self-esteem. Conceptually similar results were obtained by Kernis, Zuckerman, Cohen, and Spadafora (1982), but only under conditions of high self-awareness. Specifically, Kernis et al. reported that, following failure, subjects who were led to expect a difficult test task (and who therefore expected to fail) persisted much longer under high self-awareness conditions than did subjects who were led to base expected failure on their lack of ability. It is important to note that these differences emerged in the absence of any differences in expectations between the two groups. In other words these results indicated that under high self-awareness conditions, perceived locus of causality affected subsequent performance independent of level of expectation.

In seeming contrast to the Kernis et. al. study, however, Carver and Scheier (1982) reported an experiment in which the locus of causality for a two-person group outcome (success or failure) did not affect subjects' later performance on the same task. Kernis et al., suggested that the absence of effects of attributions for failure in the Carver and Scheier study may be due in part to the use of the same task and attributional contingencies for both the initial and test tasks. This combination of factors may have led subjects in both the internal and external conditions to not try hard and hence to perform equally poorly. Those subjects attributing failure to their own actions may have

realized that they could not do well, exhibiting the traditional helplessness effect, whereas subjects attributing the failure to their partner may also not have tried because they concluded that, in a sense, they could not succeed either. That is, since their partner was responsible for the outcome attained, even if the team did well on the second task, these subjects could not take any responsibility for the success anyway. Therefore, success would have no relevance for their self-esteem.

In the Kernis et. al. study, the initial and test tasks were different (as were the attributional contingencies) and the external attribution pertained to task difficulty. Hence, doing well on the test task did have relevance for the individual's self-esteem, since by doing well on a difficult task, one can distinguish oneself as well as atone for past failures. According to this perspective, then, the implications that various attributions have for one's self-esteem are important determinants of subsequent performance, and should be considered independently from the effect of expectancies.

The Kernis et. al., (1982) study demonstrated effects of attributions on subsequent performance, but that study examined only the effects of attributions for failure. The Carver and Scheier (1982) study showed that attributions did not affect subsequent performance, but that study utilized a test task that was identical to the initial task. The present study was designed to provide the missing link. Specifically, we examined the impact of internal (self) versus external (partner) attributions for success on subsequent performance on the same or on an entirely different task. The role of heightened self-awareness was also investigated by having half the subjects tested while facing a mirror. We anticipated that the addition of a different test task condition to what was otherwise a direct replication of Carver and Scheier (1982) would reveal the effects of attribution on performance and that these effects would be

independent of expectancy.

Method

Subjects

Subjects were 80 female undergraduates who participated in partial fulfillment of an introductory course requirement.

Procedure

With minor exceptions, the methods employed (for the same task conditions) were the same as those employed by Carver and Scheier (1982). Subjects were asked by a female experimenter to work on a series of mazes with an ostensible female co-subject (actually a confederate). Participants were told that since we were interested in how various aspects of the task might be interrelated, each person would be randomly assigned to one of two roles - either that of the worker who would actually attempt the mazes, or that of the advisor. In actuality, the drawing was rigged so that the subject was always assigned the role of worker and the confederate the role of advisor. The two roles were used to vary subjects' perceived attribution for the outcome.

Each maze had only one endpoint, but several starting points, each identified by a number. The goal was to draw a continuous line as far towards the endpoint as possible. During this phase, all subjects were given one and a half minutes to work on each of three mazes.

The advisor's job was to examine each maze for 20 seconds and then decide which of the three entry points the worker should begin at. After the instructions were given, the advisor was taken to another room from which she communicated her selections via an intercom. The subject was required to start the maze at that entry point, but could make all subsequent decisions.

Upon completion of each maze, the experimeter took it from the subject and pretended to score it with a template. All subjects were told that they scored

above the 90th percentile and that they had done very well. Thus, all subjects received success feedback regarding their performance on the initial task.

Attribution Manipulation

Before the maze trials began, the experimenter said that she was going to give the worker, but not the adivsor, one more bit of information about the mazes. Subjects in the partner attribution condition were told the following:

> The experimental plan is that you have one more piece of information about the mazes that is unknown to the advisor. So although the advisor doesn't know this, how well she chooses your starting points will have a big influence on how well you do. What's really important, then, are the choices of starting points made by the advisor and not the choices that you are going to make. In other words, your score on the maze depends on her performance rather than yours. We have to do this in order to isolate the effect of the worker's performance from that of the advisor's.

Subjects in the self attribution condition were told the following:

> The experimental plan is that you have one more piece of information about the mazes that is unknown to the advisor. So although the advisor doesn't know this, her recommendation really has very little bearing on how well you do. So it really doesn't matter which entry point she tells you to go into. What's really important are the choices that you make as you get into the maze. In other words, your score on the mazes depends on your own performance, rather than on hers. We have to do this in order to isolate the effect of the worker's performance from that of the advisor's.

Testing Phase

For one half the subjects, the test task consisted of a fourth maze. The rest of the subjects were tested on a cube-counting task that consisted of fifteen pictures, each depicting a set of cubes. Subjects were given two minutes to correctly count the number of cubes present in each of the pictures. Prior to working on the test task, subjects were asked how well tney expected to do (1 = extremely poor, 9 = extremely well).

Self-Awareness Manipulation

Subjects assigned to the high self-awareness condition performed the test

task while sitting before a 60 cm x 46 cm mirror attached to a wooden partition. Those assigned to the low self-awareness condition sat at the same table with no mirror or partition present. Subjects in the high self-awareness condition were told that the mirror was for another experiment, and that it was too difficult to keep moving it around.[1]

Results and Discussion

Unless otherwise stated, data were entered into 2 (attribution) X 2 (self-awareness) X 2 (test task) analysis of variance.

Performance on Test Task

Performance on the fourth maze was calculated as the distance (in cm) travelled along the correct path towards the goal. Performance on the cube-counting task was calculated as the number of problems solved correctly. These data were transformed into Z scores prior to being entered into a three-factor ANOVA. This analysis revealed a virtually significant attribution X test task interaction, $F(1,72) = 3.76$, $p < .06$, $r = .22$.[2] The relevant means are shown in Table 1. No other main effects or interactions emerged, all Fs < 1.

Insert Table 1 about here

It should be noted that the analysis of expectancy ratings did not produce an attribution X test task interaction, $p > .20$, suggesting that the effect of attribution on performance was not moderated by expectations. Further evidence that the effects of attribution were independent from those of expectancy was provided by a three-way analysis of covariance on performance, with expectancy ratings used as the covariate. The results of this analysis were almost identical to those obtained from the analysis of variance; in fact, the

attribution X test task interaction was now significant at the conventional level, $F(1,71) = 3.98$, $p < .05$, $r = .23$.

The results of this study lend support to the assertion that the perceived locus of causality for successful outcomes is an important determinant of subsequent performance. The direction of the obtained effects was not entirely anticipated but can be readily interpreted. Because the pattern of results was not predicted, and because the obtained difference between the internal and external conditions for the same test task contradicts the no-difference finding reported by Carver & Scheier (1982), an empirical replication seemed desirable. We therefore conducted another study, utilizing essentially the same procedures, but employing a different experimenter, different confederates, and a different subject population. Since the results from study two are essentially the same as the results from study one, we will defer a full discussion until they have been presented.

Study 2

Method

Subjects

Subjects were 92 female undergraduates who participated in partial fulfillment of an introductory course research requirement. Twelve were not included in any analyses due to suspicion. Data from an additional 20 subjects were dropped, because subsequent to their participation, it was learned that they had previously received extensive exposure to mazes (including performance feedback) during their previous week's laboratory session. This resulted in 60 subjects being used for analysis. Some analyses incorporating the 20 dropped subjects will also be presented, however.

Procedure

The procedures employed in this study were the same as those employed in the first one, with several minor variations. First, the confederate now remained in the room during the initial phase. Second, visual contact between the participants was eliminated through the use of a partition to separate the subject from the confederate. Third, the attribution manipulation was now delivered on a piece of paper placed in an envelope which subjects were asked to read over. In this way, both the experimenter and the confederate were kept blind to the subject's condition assignment.

Results and Discussion

Again, all data, unless otherwise noted, were entered into a 2 X 2 X 2 analysis of variance.

Performance on Test Task

Raw score values were again transformed into Z scores prior to being entered into a 2 (attribution) X 2 self-awareness X 2 (test task) analysis of variance. A marginally significant attribution X test task interaction again emerged, $F(1, 52) = 2.96$, $p < .10$, $r = .23$. As can be seen from Table 2, the pattern of means is essentially the same as in study 1.

Insert Table 2 about here

As in study 1, the attribution x test task interaction for expectations was not significant, $F < 1$. An analysis of covariance on performance, with test task expectations used as the covariate, produced an attribution x test task interaction that was essentially identical to the one produced by the analysis of variance, $F(1,51) = 2.93$, $p < .10$, $r = .23$.

Combinatory Analyses - Study I and Study II

To assess more fully the robustness of the present data we conducted a series of analyses combining the data from Study I and Study II. Data from the two studies were examined in a four-way analysis of variance with replication as the fourth factor. This type of analysis was justified since the procedures employed in both studies were the same except for a few minor differences.

Expectations

The main effect for test task again emerged as highly significant, $F(1,124) = 11.98$, $p < .001$, $r = .30$, indicating higher expectations among subjects tested on the maze than among those tested on the cube-counting task.[3]

Performance on Test Task

The analysis of performance data produced no main effects or interactions involving replication, $Fs < 1$. Most importantly, the attribution X test task interaction emerged as highly significant , $F(1,124) = 6.87$, $p < .01$, $r = .23$. The relevant means are presented in Table 3. When the 20 subjects with previous exposure to mazes were included in the analysis, the attribution X test task interaction still emerged as significant $F(1,144) = 4.29$, $p < .05$, $r = .17$.

Insert Table 3 About Here

An analysis of covariance, utilizing test task expectations as the covariate, indicated the same attribution X test task interaction, $F(1,123) = 7.15$, $p < .01$, $r = .23$. T-tests indicated that the difference in performance between self and partner attribution subjects tested on the same task was significant at $p < .05$.

General Discussion

The results of the present investigations indicated that people who were led to attribute their success internally performed better when tested on the same

task than on a different task; individuals who were led to attribute their success externally did better on a different task than on the same task. How can these findings be accounted for? People in the self attribution condition probably developed confidence in their ability to perform well on the same task as a function of the prior verbal reinforcement that they had received. Further, since they were responsible for the outcome, it is likely that they were highly attentive to the task characteristics, enabling them to do well. However, when tested on an unfamiliar task, they may have had less confidence in their ability which resulted in relatively poorer performance.

The explanation for the relatively poor performance by partner attribution condition subjects tested on the same task appears straightforward. As long as their partner was considered responsible for the outcome, these individuals were probably not very motivated to try hard or attend highly to the task characteristics. However, when given a chance to show that they were competent individuals in a context of self-determination, (i.e., one in which they could be responsible for the outcomes they received), they became more motivated and hence, performed better. As Deci (1980) has noted, people want to feel competent and self-determining in their interactions with the environment. Up to now, research has focused on the debilitating effects of loss of self-determination (e.g., Langer and Rodin, 1976). The present results suggest that there may be certain conditions under which the lack of ability to determine one's outcomes may not be debilitating. Specifically, brief exposures to non-self-determined success may actually motivate people to try harder in situations where their outcomes do depend on their behavior. However, following longer exposures that take place over an extended time period, people may be less likely to recognize situations where they can be self-determining and have their outcomes depend on their behavior. Further, even if they do recognize the

situation as one allowing for self-determination, they still may not try because one self-determined success may not be meaningful in the context of numerous non-self-determined successes.[3]

In any case, it is apparent that perceived locus of causality is an important determinant of subsequent performance. One important point needs to be made here. Although we have couched our explanations in terms of attributions, we do not believe that attributions per se constitute a full explanation. Rather, we see internal and external attributions as reflective of "deeper" motivational processes (as discussed above) that affect the individual's entire orientation to the experimental context, and that it is these motivational processes that are most directly responsible for the experimental effects.

Based on the work of Carver and Scheier (1982) and our own intuitions concerning the use of the same task and attributional contingencies during the initial and test phase, we did not anticipate finding performance differences among people tested on the same task. Clearly, this was not the case. In each of our studies, which involved successful outcomes, the pattern of performance was the same: Self attribution subjects performed substantially better than other attribution subjects when tested on the same task. Further, the effects of attributions were shown not to be mediated by one's level of expectations. Subjects in the internal conditions performed differently from subjects in the external conditions, even though their expectations were not different. These results are in sharp contrast to the assertion made by both Carver and Scheier (1982) and Abramson et al (1978) that the effects of attributions on subsequent performance are limited to their effects on an individual's expectancies. However, they are consistent with the findings reported by Bernstein, Stephan & Davis (1979) that when attributions did affect subsequent performance (as

assessed through path analytic techniques) it was not through their impact on expectancies.

In contrast, our findings were consistent with Weiner's (1972) assertion that attributions can affect subsequent performance via their influence on one's affective reactions to the prior outcomes. Subjects in the internal condition may have felt more confident and pleased (Weiner, Russell, & Lerman, 1978) than subjects in the external condition, resulting in better performance on the same task. External condition subjects tested on a different task who were deprived of these feelings earlier were probably motivated by the opportunity subsequently afforded to them to experience those feelings. As Covington and Berry (1976) have noted, people are motivated to maintain a conception of themselves as having high ability, a conclusion that is clearly derived, in part, from internally based success experiences.

The lack of findings pertaining to heightened self-awareness was also somewhat surprising. The fact that all subjects received success feedback may have increased self-awareness to a level uniformly high enough to preclude its impact in this context. As Gibbons and Wicklund (1976) have shown, successful experiences dramatically enhance the tendency to engage in self-awareness.

Evidence is now accumulating that attribution manipulations are likely to affect subsequent performance when they have clear implications for an individual's self-conception of ability. In the case of failure, manipulations that promote the perception of low ability have been shown to lead to behaviors that are designed to create and sustain some ambiguity regarding the individual's level of ability (Darley and Goethals, 1980; Snyder and Wicklund, 1981). For example, Kernis et al (1982) reported that in a high self-awareness context, subjects who expected to fail on a task due to a lack of ability persisted much less than did subjects who believed that the upcoming task was extremely

difficult. This withdrawal of effort is likely to have reflected an attempt on the subjects' part to create the belief that they could have done well (and hence, really do possess the ability) if only more effort had been exerted. Conceptually similar results have been reported by Frankel and Snyder (1978) and Berglas and Jones (1978). These findings highlight the tendency for people to behave in certain ways so as to avoid the conclusion that they possess low ability (a conclusion that was differentially prompted by the attribution manipulation), which occurs in spite of the fact that the behavior may make failure more likely to occur.

With regard to success, the present research showed that performance suffered when there was no possibility of the success being a result of one's ability. Equally as important, it was shown that subjects who had initially received success feedback under these conditions subsequently performed much better when their success could be attributed to their own actions (and, hence, attributable to their own ability). Taken together, the results of these studies appear to indicate that attributions will have an impact on subsequent performance when they have clear implications regarding one's level of ability.

In sum, the present investigations provide substantial evidence that the locus of causality for one's achievements is a significant determinant of subsequent performance. Further, they point to the importance of factors relating to affect and self-esteem. It is hoped that this work will stimulate a renewed interest in motivational factors as they relate to performance.

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Footnotes

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[1]Data regarding subject's perceptions of themselves, their partners, and the test task were also collected. Since these measures are only of secondary importance, we have elected not to present them here. All analyses are available upon request from the author.

[2]A measure of effect size, the Pearson r was computed as

$$r = \frac{F_{1, __}}{F_{1, __} + df_e}$$

(Rosenthal & Rosnow, 1984). The actual magnitude of the effect is indicated by r^2, which is an estimate of the variance accounted for.

[3]The similarity of this line of reasoning to the predictions made concerning the occurrence of reactance following short term exposure to uncontrollable negative outcomes versus severe deficits following long term exposure (Wortman & Brehm, 1975) is readily acknowledged.

Table 1

Performance (in Z scores) as a Function of Attribution and Test Task

Attribution	Task: Same[1]	Task: Different[2]
Self	.291	-.150
Partner	-.291	.150

[1]Performance on same task was measured in terms of distance travelled along the correct path.

[2]Performance on different task was measured by the number of correct solutions.

Table 2

Performance (in Z scores) as a Function of Attribution and Test Task

Attribution	Task: Same[1]	Task: Different[2]
Self	.240	-.256
Partner	-.195	.211

Note. Means do not add to 0 because of slight differences in cell sizes.

[1]Performance on same task was measured in terms of distance travelled along the correct path.

[2]Performance on different task was measured by the number of correct solutions.

Table 3

Performance (in Z scores) as a Function of Attribution and Test Task

Attribution	Task: Same[1]	Task: Different[2]
Self	.271	-.194
Partner	-.248	.178

Note. Means do not add to 0 because of slight differences in cell sizes.

[1]Performance on same task was measured in terms of distance travelled along the correct path.

[2]Performance on different task was measured by the number of correct solutions.